

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

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1. (currently amended): A regenerator for a wavelength division multiplex transmission system, ~~including~~ comprising:

a demultiplexer adapted to separate the signals of various channels;

a plurality of optical modulators each adapted to receive signals from the demultiplexer and a modulation clock from a clock distribution unit; and

a multiplexer adapted to combine the signals modulated by said modulators,

~~in which regenerator wherein~~ the clock distribution unit ~~includes~~ comprises:

a reference clock; and,

for each modulator, means for synchronizing the phase of a copy of the reference clock with the signals applied to the modulator.

2. (currently amended): The regenerator of claim 1, wherein the phase synchronization means ~~include~~ comprises a phase-locked loop for each modulator.

3. (currently amended): The regenerator of claim 2, wherein the phase-locked loop ~~includes~~ comprises a phase shifter receiving a copy of the reference clock and supplying ~~a~~ the

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modulation clock and the phase shifter is controlled in accordance with the average power of the output signals of the modulator.

4. (currently amended): The regenerator of claim 3, wherein the phase-locked loop ~~includes~~ comprises a coupler adapted to sample a portion of the output signals of the modulator and a photodiode adapted to receive the signals from the coupler and to supply a voltage representative of the average power of the output signals of the modulator.

5. (original): The regenerator of claim 4, wherein the phase shifter is controlled by a signal in accordance with the difference between said voltage and a reference voltage.

6. (original): The regenerator of claim 5, wherein the reference voltage depends on the total power of the signals at the output of the regenerator.

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7. (original): The regenerator of claim 5, wherein the reference voltage is remote-controlled.

8. (original): The regenerator of claim 1, wherein the reference clock is supplied by a voltage-controlled oscillator.

9. (original): The regenerator of claim 8, wherein the oscillator is controlled in accordance with the signals applied to the regenerator.

10. (currently amended): The regenerator of claim 8, ~~including further comprising:~~  
a coupler for sampling a portion of the input signals of the regenerator; and  
a clock recovery circuit adapted to receive signals sampled by the coupler and to supply at its output a control signal for the oscillator.

11. (currently amended): A wavelength division multiplex transmission system  
~~including comprising~~ a regenerator according to claim 1.

12. (new): A regenerator according to claim 1, wherein the plurality of optical  
modulators directly receive signals from the demultiplexer.

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13. (new): A regenerator according to claim 2, wherein said phase-locked loop  
comprises:

a phase controller;

a photodiode; and

an amplifier.

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